

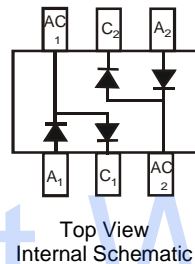
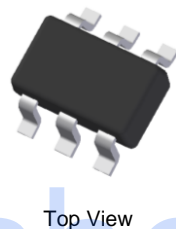
Features

- Fast Switching Speed
- High Reverse Breakdown Voltage
- Low Leakage Current
- Low Capacitance
- Two "BAV99" Circuits In One Package
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

Mechanical Data

- Case: SOT363
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe; (Lead-Free Plating). Solderable per MIL-STD-202, Method 208 @3
- Polarity: See Diagram
- Weight: 0.006 grams (Approximate)

SOT363



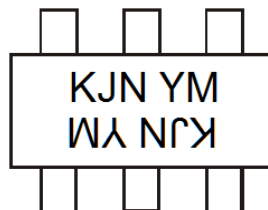
DatasheetWorld

Ordering Information (Notes 4 & 5)

| Part Number | Qualification | Case | Packaging |
|--------------|---------------|--------|--------------------|
| BAV99HDWQ-13 | Automotive | SOT363 | 10,000/Tape & Reel |

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to http://www.diodes.com/product_compliance_definitions.html.
 5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



KJN = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: C = 2015)
 M = Month (ex: 9 = September)

Date Code Key

| Year | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|------|------|------|------|------|------|------|------|------|
| Code | C | D | E | F | G | H | I | J |

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D |

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit |
|---|---------------------|-------------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 100 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _R | | |
| RMS Reverse Voltage | V _{R(RMS)} | 71 | V |
| Forward Continuous Current (Note 6) | I _{FM} | 200 | mA |
| Repetitive Peak Forward Current | I _{FRM} | 500 | mA |
| Non-Repetitive Peak Forward Surge Current | I _{FSM} | @ t = 1.0μs | 4 |
| | | @ t = 1.0ms | 1.0 |
| | | @ t = 1.0s | 0.5 |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Power Dissipation (Note 6) | P _D | 250 | mW |
| Thermal Resistance Junction to Ambient Air (Note 6) | R _{θJA} | 500 | °C/W |
| Thermal Resistance Junction to Solder Point (Note 7) | R _{θJSP} | 260 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °C |

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|-------|------|---|
| Reverse Breakdown Voltage (Note 8) | V _{(BR)R} | 100 | — | V | I _R = 2.5μA |
| Forward Voltage | V _F | — | 0.715 | V | I _F = 1.0mA |
| | | — | 0.855 | | I _F = 10mA |
| | | — | 1.0 | | I _F = 50mA |
| | | — | 1.25 | | I _F = 150mA |
| Reverse Current (Note 8) | I _R | — | 0.5 | μA | V _R = 80V |
| | | — | 50 | | V _R = 80V, T _J = +150°C |
| | | — | 30 | nA | V _R = 25V, T _J = +150°C |
| | | — | 30 | | V _R = 25V |
| Total Capacitance | C _T | — | 1.5 | pF | V _R = 0, f = 1.0MHz |
| Reverse Recovery Time | t _{RR} | — | 4.0 | ns | I _F = I _R = 10mA, I _{RR} = 0.1 x I _R , R _L = 100Ω |
| Forward Recovery Voltage | V _{FR} | — | 1.75 | V | I _F = 10mA, t _R = 20ns |

- Notes:
6. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
 7. Soldering points at pins AC1, AC2 and C1, C2.
 8. Short duration pulse test used to minimize self-heating effect.

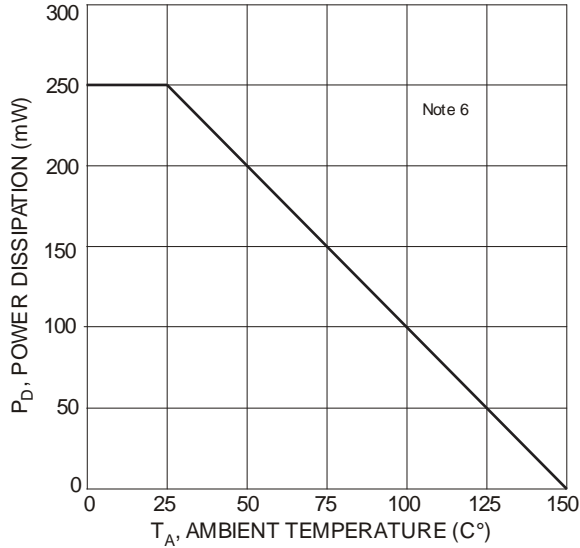


Fig. 1 Power Derating Curve, Total Package

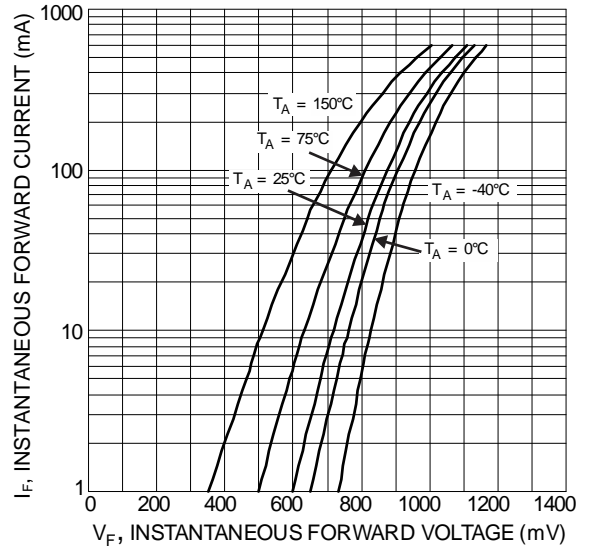


Fig. 2 Typical Forward Characteristics

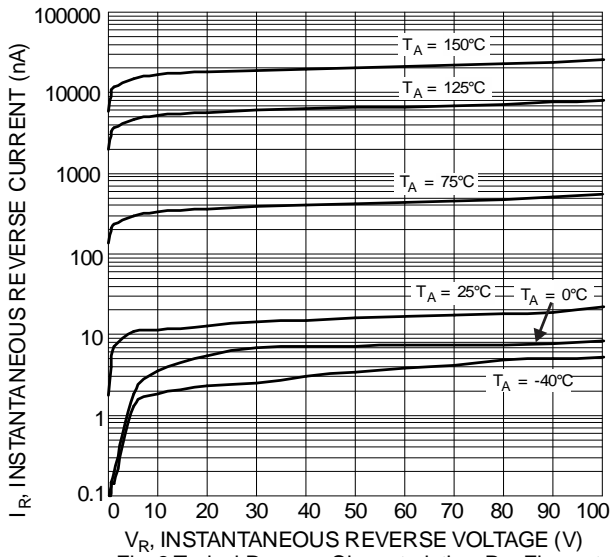


Fig. 3 Typical Reverse Characteristics, Per Element

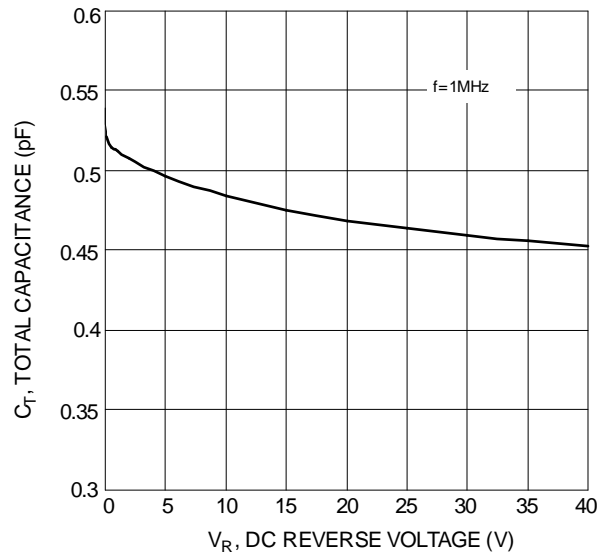
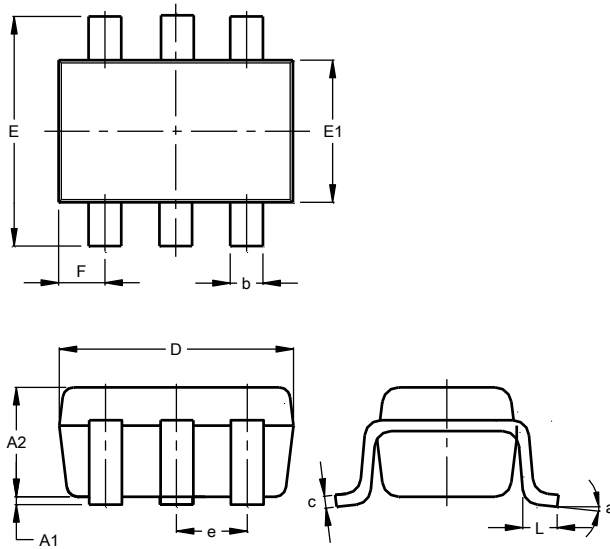


Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

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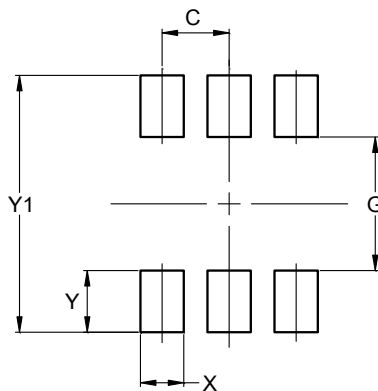


| SOT363 | | | |
|----------------------|-----------|------|-------|
| Dim | Min | Max | Typ |
| A1 | 0.00 | 0.10 | 0.05 |
| A2 | 0.90 | 1.00 | 1.00 |
| b | 0.10 | 0.30 | 0.25 |
| c | 0.10 | 0.22 | 0.11 |
| D | 1.80 | 2.20 | 2.15 |
| E | 2.00 | 2.20 | 2.10 |
| E1 | 1.15 | 1.35 | 1.30 |
| e | 0.650 BSC | | |
| F | 0.40 | 0.45 | 0.425 |
| L | 0.25 | 0.40 | 0.30 |
| a | 0° | 8° | -- |
| All Dimensions in mm | | | |

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT363



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 0.650 |
| G | 1.300 |
| X | 0.420 |
| Y | 0.600 |
| Y1 | 2.500 |

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